



The lake steamer pictured is loading at the dock of a Duluth elevator. The loaded wheat is then carried to Buffalo where some will be milled and some transshipped thru the New York State Barge Canal to the Port of New York for shipment overseas.

GRAIN

THE MAGAZINE OF PLANT MANAGEMENT AND OPERATION

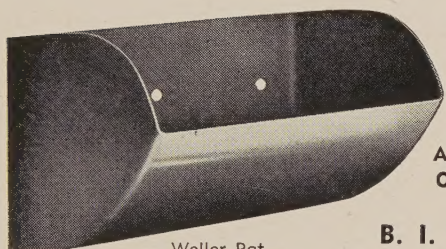


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CROPS CORRECTED BY PLANT BREEDERS:

Plant breeders have not only given farmers crop varieties superior to their old ones in yield, quality and disease and insect resistance, but, according to the U. S. Department of Agriculture, have gentled many of them so they are much more agreeable to handle. Otherwise good varieties with clinging, gouging beards or itch-inciting hairs have given way in many instances to new ones in which these characteristics have been reduced at little or no expense to important positive factors. In fact, the plant breeders show that in many instances these tamed touch-me-nots are much better in yield and quality factors than those they have superseded.

The wheat breeders, who have to their credit scores of new good-quality high-yielding varieties resistant to rusts and smuts, remember a famous old variety, Sonora, introduced into California by the Spanish padres, which has on the glumes a fuzz responsible for a skin irritation farmers came to call Sonora itch. An occasional patch of Sonora may be found today, but present varieties of the area are better for production and pleasure of handling.

Barley beards, or awns, have long been the bane of farmers harvesting and threshing that crop. The plant breeders have created good smooth-awned varieties, but with the great increase in combine harvesting there is less objection to the rough-awned kinds.

Rice harvesting, in contrast with the barley experience, has been more of an irritating job since the coming of the combine because the combined grain frequently requires drying and in the process many varieties give off a dust highly irritating to the human skin. As a result, such varieties are becoming unpopular and rice breeders have already produced several new ones without the small hairs of leaf and hull that make up that dust.

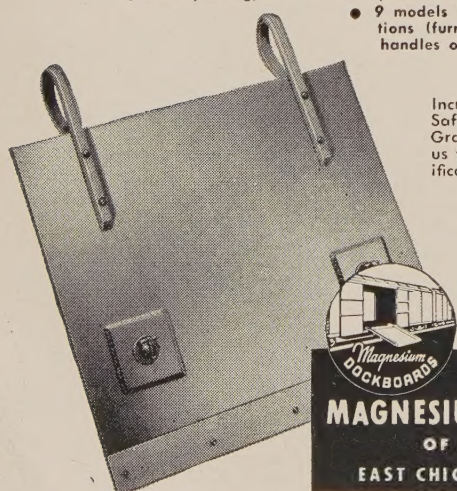
Improvements of a similar nature have been brought about by geneticists working on many other crops: A kind of grain sorghum called white durra, became unpopular because of its irritating hairs that cause "durra itch" and the plant breeders have largely avoided this factor in the improved varieties that have many positive improvements to recommend them. Many grasses have had obnoxious awns or saw-edged leaves softened and smoothed by the scientists to suit the pleasure of animals and the profit need of farmers. The stipa grasses and Napier-grass are examples. Among the legumes, burclover is an example of a forage crop that has been bred for burs (seedheads) less bothersome. Minute spines have been bred off okra pods in some varieties, making them easier on picker's fingers.

In eliminating spines, hair, spicules and dusts, and sometimes other irritants, the plant breeders, while making possible better yields of better quality, have brought many comforts to farmers, domestic animals and consumers.

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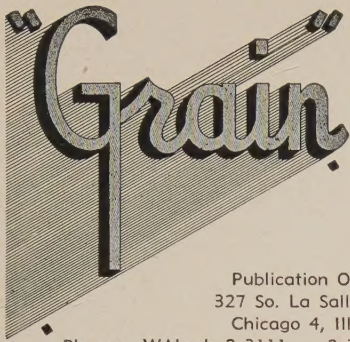
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MANAGEMENT AND OPERATION**

DEAN M. CLARK, Publisher

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SOGES CHAPTER MEETING DATES

1st TUESDAY — Minnesota SOGES Chapter. Henry J. Anderson, Bunge Corp., Minneapolis, President; James Auld, Hales & Hunter Co., St. Louis Park, Secretary.

2nd TUESDAY — Omaha Council Bluffs SOGES Chapter. John T. Goetzinger, Rosenbaum Bros., Omaha, President; W. S. Pool, Nebraska-Iowa Elevator, Omaha, Secretary.

2nd FRIDAY—Central States SOGES Chapter. M. M. Darling, Acme-Evans Co., Indianapolis, President; N. R. Adkins, Ralston Purina Co., Lafayette, Secretary.

3rd TUESDAY—Kansas City SOGES Chapter. Orin Kinman, Cargill, Inc., Kansas City, President; George D. Duncan, Standard Milling Co., Kansas City, Secretary.

3rd TUESDAY — Chicago SOGES Chapter. Edward Anderson, Norris Grain Co., Chicago, President; Harry Hanson, Glidden Co., Chicago, Secretary.

3rd THURSDAY — Buffalo SOGES Chapter. Cornelius Halsted, General Mills, Inc., Buffalo, President; James Burns, Pillsbury Mills, Inc., Buffalo, Secretary.

Harvest of more than food



• At still another difficult time in world affairs, the American farmer has come to the rescue with a record harvest of corn—and near-record harvests of wheat and other crops.

This great accomplishment assures our nation of more than nourishment for our own people alone. It also makes it possible for us to supply food—and thus new hope for the future—to millions of people abroad.

Collecting this harvest for delivery to those who need it is the job of our nation's railroads. And this year they have performed this task faster and more efficiently than ever before.

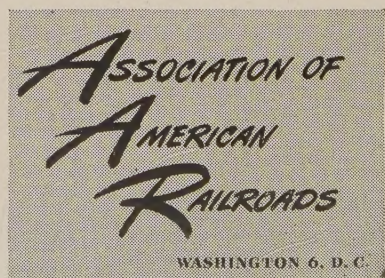
Credit for this achievement is due to the cooperation of shippers and receivers in making possible faster turn-arounds of freight cars; to increased railroad operating efficiency; and to the new freight cars, locomotives and rail facilities the

railroads have been adding as fast as manufacturers could supply them.

At bottom, though, the fact that America is able to help the world with food—and with more than food—goes back to the system of individual enterprise and opportunity of which both the American farmer and the American railroads are vital parts.

★

THE RAILROAD HOUR brings you one of the world's great musical comedies every Monday evening. TUNE IN, ABC Network, 8-8:45 Eastern, Mountain, and Pacific Time; 7-7:45 Central Time.



CONVEYORS

THE ARTERY OF PRODUCTION

The first commercial use of conveyors occurred in this country about the year Eighteen Hundred and Eighty. This use was in connection with grain elevators. Shortly thereafter there followed the use of conveyors in mining operations, and subsequently in cement plants and industrial power plants. The first industrial use of conveyors, therefore, was for the handling of bulk materials, the conveyors being simply the medium of transportation and confined generally to power house installations. The function of the conveyor in this case was simply that of a work horse, that is, it was exclusively a labor or time saver and performed no function other than bringing material from one place to another. The decision to purchase this type of equipment was based on the amount of saving that could be made in the nonproductive payroll. Not only was no other factor considered, but it was not suspected that any other factor was even remotely involved. Thus, conveyors got their foot, so to speak, into industry's back door.

Bulk To Package

From the handling of bulk materials in transportation, it was a logical step to the handling of so-called packaged materials or individual parts or articles within the plant. While the handling of bulk materials had been accomplished by the use of belt conveyors and bucket elevators, this second use of conveyors called for new types of design. These covered broadly the slat or platform type conveyor, the slider belt type conveyor, and numerous forms of so-called chain conveyors. The roller conveyor was developed during this same period for use in lumber yards and brick plants. This development and use of conveyors for the transportation of bulk materials and packaged articles or parts in industry took place in the opening years of the Twentieth

C. L. MOON
Sales Engineer
Mechanical Handling Systems
Detroit, Michigan

Century. Generally, only the most obvious cases received attention. There was no science as yet, in conveyor design and installation was usually accomplished by an ingenious mill-wright working with a selection of standardized items secured from the local mill supply houses. These installations, of course, were crude and followed no set pattern, each individual application being the product of the caprice, whim or idiosyncrasy of the builder or determined and limited by the gears, sprockets, and chain readily available. This then, was about the status of industrial conveyor use up to the time that the automobile industry loomed on the horizon as the first potentially important industrial mass producer.

Conveyor Line Started in 1912

It is generally agreed that the first important application of conveyors to a manufacturing operation was made by Henry Ford about the year 1912 or '13 when he installed the first conveyorized assembly line. From that point forward, the development of the science of conveyors has marched side by side with the overall development of mass production technique, the one dependent upon the other, and now the two inseparably intertwined. The major requirements of this technique are, of course, volume and standardization, and the automobile industry gave generously of both. Here then, was the workshop where a great many of our modern manufacturing techniques were developed and this is particularly so in the field of conveyors.

The basic idea of assembly in motion was nothing short of an industrial revolution in itself. The

modern manufacturing pattern for which the die was cast when this first assembly conveyor was put into operation is a very far cry from the industrial pattern which prevailed at that time. The most advanced and modern stage of this development exists in some of the latest plants designed and built for the war program and dedicated to a single purpose. The road to this achievement has been long and arduous with the period of greatest development and accomplishment beginning at the close of World War I and continuing to the present time.

Conveyors Linked to Shop Science

The adoption by industry of conveyorized assembly along with the development of scientific shop management by Taylor and others have had profound influences upon our industrial pattern. The results obtained by conveyorized assembly were so spectacular that efforts were made to apply the same principles to the other manufacturing operations. It is strange that this first conveyor application was made at the tail end of the manufacturing cycle, however, final assembly was giving a great deal of trouble to the motor car makers and they naturally attacked the most critical spot first. While the first objective in industrial conveyor use had been the reduction of nonproductive labor payroll, it was soon realized that here also was a tool which could also have a profound effect upon productive payroll as well. This effect, however, did not necessarily entail reduction in the production labor payroll, except indirectly by the means of enormously increasing the worker's productivity.

In other words, more and more cars began to be produced without adding to the number of workers. This development took place in the main, in the period following World War I. It was during this same

period, of course, that the automobile industry experienced its greatest growth and, of course, this was a very fertile field for the development of this new technique. The increased competitive pressure for higher quality and lower cost was a driving force that produced amazing results. During this time conveyors slowly became integrated into the whole manufacturing operation so that they now cover extensively the field of transportation now broadened to cover the receipt, storage, and distribution of raw materials, the various processing operations, such as heat treating, plating, painting etc., all of the subassembly and final assembly operations, and, in many instances through to the shipping of the completed product or article.

In a modern plant, conveyors have become such an integral part of the manufacturing process that it is difficult to separate them from the rest of the equipment, and even more difficult to imagine modern manufacturing activity being conducted without their use. The conveyor system in its highest form of development is truly the artery of production. Thru these veins flow, at pre-determined speeds and at regular intervals, the raw materials and the component parts of the finished product, the basic manufacturing operations in each case being broken down into relatively simple units of work so that the major skills have been greatly simplified.

Bottlenecks Eliminated

Operations are so timed and synchronized that an even uninterrupted flow without bottle necks is achieved. The quality of work is greatly increased because individual responsibility has been lessened, the functions and duties of each individual have been clearly defined, each worker having a definite job to do and a prescribed time in which to do it. This breakdown makes for easy control, both of the volume of production and also of the quality of the product. The function of proper inspection is greatly simplified by virtue of the work being broken down into simple units. In

this way, faulty work can be discovered before any serious amount of harm is done.

The most important factor, however, is the fact that the opportunity for doing poor work is greatly minimized by the reduced skill requirement of the operation. The fact that everything travels over a pre-determined route means that an accumulation of parts or banks of material stored on the floor or in containers is entirely eliminated. This not only makes a tremendous improvement in general housekeeping but it makes a substantial reduction in work-in-process inventory.

Lower Production Costs

All of these factors add materially to cost reduction and overall manufacturing efficiency without reducing the earnings of workers. As a matter of fact, many of the most modern plants have, at this time, the lowest unit labor cost coupled with the highest individual worker earnings. This, of course, is a very desirable condition from every standpoint. While the original incentive for conveyor installations was reduction in payroll, the process of evolution thru which this science has passed during its period of recent development has added to it, countless other benefits, both tangible and intangible which appear to be of even greater importance than that which was attached to the original objective.

War Accelerated Development

It is a generally known fact that war always leads to an accelerated technological development. The impetus which we received from World War I carried us into the expansion period of the Twenties. Let us hope that the impetus which we have received from World War II will carry us into a period of activity which will have a far happier ending and I may say that I have every hope that it will. It is not to be considered that the period of development just recently referred to is by any means complete, nor is it to be assumed that the scientific use of conveyors has invaded all of the fields where it can be profitably applied. Although

the progress made between the two wars was substantial, there are still some industries with a goodly number of concerns who have not adopted, or at best, who have been very slow to adopt the new techniques.

This may be attributed to a number of reasons, among which stands out rather too prominently the attitude that "My business is different." This, too many times, has acted as a smoke screen behind which many an ultra conservative management has clung doggedly to the status quo.

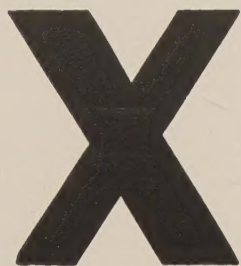
Personnel Important

This attitude, however, is more particularly true of some of the old line industries where ownership and/or management has now succeeded to the second or even in some instances, to the third generation. Another reason, is the scarcity of competent personnel within industry capable of doing the job. The answer to the first group is simple. If they insist upon maintaining the status quo long enough, the law of economics will deal with them. The second group, that is, those who are willing but do not consider that they have the means of bringing about the end, will be taken care of when management is made more familiar with the help that is available from without the industry.

Plant Layout

Proper conveyor application is, of course, an integral part of proper plant layout. In order to assure the greatest benefit from conveyor use, conveyor engineers, at least, the most competent and the most alert ones, have become experts in plant layout. Great progress has been made by the cooperative efforts of these men and the men within industry. Some of the modern World War II plants just referred to give eloquent testimony of this. In many cases, plants were geared up for mass production for the first time. This opened up to them entirely new vistas in the field of manufacturing and has been a tremendous impetus to vast improvements and changes in the post-war period.

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THE CHALLENGE OF HUMAN RELATIONS

Harry A. Bullis, Chairman of the Board, General Mills, Inc.

There are limits beyond which business cannot go in providing security, but in general it can do more than it has been doing. This problem in human relations should challenge the best that is in us. Employees must be shown that their security is interwoven with the security of the enterprise, and what helps one automatically assists the other. Management must keep open the door of opportunity to those who would climb to higher levels.

We must constantly keep this open door policy before our employees. I believe this is the greatest weapon that business has today against the "isms" attacking America. Give opportunity to the man who wants opportunity, and he will make the most of it and be a great booster for the American way. Industry must regard the human individual as a unit which both thinks and acts, and its program of human relations must be planned accordingly.

Another way of expressing this principle is to say that employees should not be treated merely as pickets in a fence or as cogs in a machine. They must be accepted as associates who have self-respect and self-confidence. Each should be given the opportunity to advance if he or she is willing to pay the price in intelligent hard work. Three basic human aspirations were listed as the desire to get ahead, the desire for security, and the desire for recognition. The first of these expresses itself in the need for good wages and salaries and opportunities for advancement. But assuming your employee has sufficient income and a reasonable degree of security — is he content? No, he wants more than these. He craves satisfaction in his work. He wants the respect of his fellows and to feel that he belongs — that he is a member of the team.

These wants are much less definite than wages and hours of work, pensions, and insurance. But they are equally important. To ignore

them is to invite discontent and inefficiency. This underlying sense of frustration and restlessness is basic, and granting demands for shorter hours and higher wages will not by themselves eliminate it. Industry must overcome the problem of monotony on the production line and show the employee the road to satisfaction in his work. Management should increase the employee's sense of participation in the enterprise.

Just consider that desire for recognition, for participation — and how important it is, yet all too often management seems to say, "Men, I am the team!" Yes, it only seems to say it. But what it should be saying, loudly and proudly, is "Men, we are all on the team, and we will win together."

To the worker, the foreman is management, that is why management must give more attention to the selection of foremen and supervisors. It is true that an employee gets his first and often his most lasting impressions of a company through his supervisor during his first few days on the job. Employees must be taken into the confidence of management and given facts on company operation and they should be given the complete picture. Earnings should be included — but also let industry show the totals of its payrolls, the number it employs, and the amount of earnings reinvested in the business to create more jobs and services. Let company executives list employees for what they are — the most important asset of the company.

We of industry must remember that it was the hare's attitude that caused him to lose to the tortoise. It was the attitude of the tortoise that caused him to win. It is our job to give such an account of our stewardship that we will create and maintain a favorable mass public attitude toward business and the free enterprise system.

STUDY THEIR INTERESTS

When you are trying to win friends and influence people as a supervisor, an insurance salesman or an editor, remember that your message should appeal to your prospect's interest in one or more of the following:

1. Himself: His self-importance, personal ambitions, things he can do well.

2. Life's basics: His security, pay check, health, working conditions.

3. Other people in this order: Immediate family, relatives, friends, acquaintances.

4. Anything close to the field in which he is active.

5. Hobbies: Things he enjoys doing.

Studying the individual will tell which of the above appeals will bring best results. It is safe to assume that everybody is interested in Nos. 1 and 2.

These hints are from Foreman Facts, published by The Labor Relations Institute, 1776 Broadway, New York 19.

HEDGING

The ability of food processors to hedge on the grain exchanges and eliminate the speculative risks of price fluctuation permits them to do business on the lowest possible profit margins, thus passing such savings on to the consumer. At the same time, this ability to shift the speculative risks to others enables the processor and grain merchant to remain in the market continuously, thus providing a constant demand for the farmer's grain crop.

CARLOADINGS UNDER 1946 AND 1947

Cumulative loadings of grain during the 49 weeks to December 4 were 2,327,815 cars as compared to 2,597,688 in 1947 and 2,344,781 in 1946. According to the report issued by the Association of American Railroads, 1948 carloadings are under 1947 loads by 10.4% and 0.7% under 1946. The week ending December 4 showed 54,002 cars

were loaded with grain and grain products, an increase of 4,563 cars above the same week last year, but a decrease of 1,005 cars below the same week in 1946.

DUST EXPLOSIONS IN INDUSTRIAL PLANTS

A revised text of the Fundamental Principles of Dust Explosions in Industrial Plants was prepared by the Committee on Dust Explosions of the National Fire Protection Assn. The revised text was adopted at the 1948 annual meeting. It supersedes the text in National Fire

Codes Volume II and NBFU Pamphlet No. 63. Copies of the 8-page pamphlet are available from the NFPA office at 15 cents each. (60 Batterymarch St. Boston 10-Mass.)

The tentative schedule for NFPA committee meetings to be held at the Hotel Commodore in New York are: Jan. 25, Explosion Venting, Harold Crouch, Eastman Kodak Co., Rochester, N.Y., chairman; and Jan. 26, Dust Explosion Hazards, Hylton R. Brown, U. S. Bureau of Mines, College Park, Md., chairman.

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Takes up minimum space—less than one-fifth that of belt conveyors. Capacity up to 1000 tons per hour—up to 1000 feet in length.



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MINNEAPOLIS "LADIES' NIGHT"



Two of the pictures taken during the festivities at the annual banquet of the Minneapolis Chapter of the SOGES. Above: General view of the Nicollet Hotel dining room where the Ladies' Night dinner was served. Below: The Head table; James Auld, Hales & Hunter Co., Mrs. Auld; Henry Anderson, Bunge Corp., Mrs. Anderson; Ernest Ohman, Osborne-MacMillan Elevator, Mrs. Ohman; Harmon Norton, Russell-Miller Co., Mrs. Norton; A. B. Osgood, The Day Co., Mrs. Osgood; Mrs. MacIver, Clifford MacIver, Archer-Daniels-Midland. 1st vice president, SOGES, Mrs. Shepardson, Hill Shepardson, Hart-Carter Co.



CHICAGO SOGES VISITS BORDEN

Two days before the formal opening on November 18 of the Borden Company's new solvent extraction plant for soybeans, members of the Chicago Chapter of the SOGES toured the \$3,000,000 property. The

plant requires only five men to operate its production of 135 tons of soybean meal and 600,000 pounds of oil daily. Bean storage elevators will hold 900,000 bushels and meal and flake storage capacity is 1000 tons. The plant covers approximately 32 acres.

CHICAGO SOGES TO TOUR UNDERWRITERS' LABORATORIES

The members of the Chicago Chapter of the SOGES will visit the Underwriters' Laboratories, Inc., 207 East Ohio St., Chicago, on Jan. 19th. An extensive tour through the laboratories will start at 2 p.m. Dinner will be held at the St. Clair Hotel and following the meal movies will be shown to further demonstrate the functions of the laboratories.

LINCOLN SCOTT TO TOKYO

Corn Products Refining Company's Lincoln Scott, assistant Superintendent of their Argo plant until January 1948 and now staff assistant of the manufacturing department, left on Nov. 19 for a three month stay in Tokyo. Scott will be associated with the Office of Food Administration of United States Occupied Areas and his primary objective will be to deal with the conversion of corn into an acceptable substitute for rice. Rice which has always been the main food of the Japanese has been in short supply and corn will be used to combat the growing deficiencies in the Jap diets.

Scott was selected for this task because of his knowledge and experience of the corn processing industry and because of his familiarity with Jap customs and business, having operated the CPRCo's Korean plant from 1931 to 1940 when the Japanese took control. Scott holds the office of 1st V.P. in the Chicago SOGES Chapter.

RAYMOND E. FRANK DIES

Raymond E. Frank, vice-president of the Peerless Mill Supply Co., Inc., Buffalo, N. Y., and a member of the SOGES Buffalo Chapter, died recently after a nine days' illness. Mr. Frank was 46 and had been with the Peerless firm for 26 years, receiving his promotion to vice-president just a year ago. His widow, a son and six daughters survive.

1100 MADE VICE-PRESIDENTS

Approximately 1100 employees in the General Mills plant at Buffalo, N. Y., were recently named vice-presidents in charge of safety. The "promotions" were made because of the workers' efforts in the plant safety program which cut the rate of accidents to 2.3 per million man-hours.

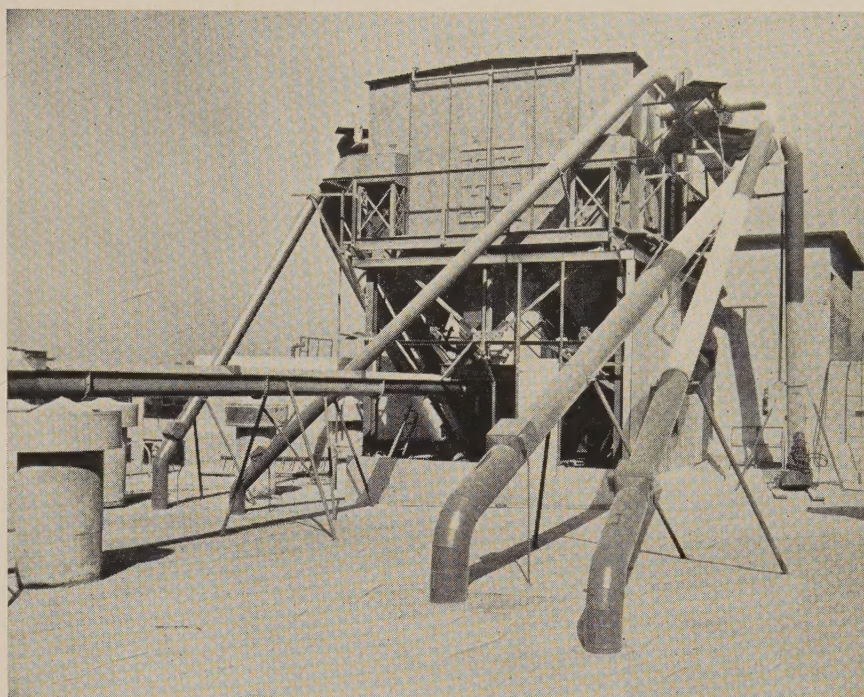
WORLD WHEAT PRODUCTION

Estimates released place the world wheat production at 6,285 million bushels, approximately 35 million bushels above the estimate given in September. The new figure tops the 1947 production of 5,820 million bushels and that of the 1935-1939 average of 6,010 million bushels.

STILL SUPPLY AND DEMAND

The folly of relying upon the outcome of "planned production" is evident in comparing statistics of corn yields during 1947 with those of 1948. Corn acreage planted in 1948 amounted to slightly less than 2 per cent more than the previous year, yet the total crop is expected to run nearly 50 per cent more than the previous year! Man has not yet learned to predict or control the all-important factor of weather in a "planned agricultural economy". More important, however, he has learned to balance the supply and demand factors through the medium of the free marketing system now in operation.

DUE TO MANY REQUESTS FOR BACK ISSUES OF GRAIN, THIS PUBLICATION'S BACK COPIES FILE IS NEAR DEPLETION. ANY DUPLICATES OR EXTRA COPIES (1936-1948) THAT YOU HAVE ON HAND AND CAN SEND TO US WILL HELP MATERIALLY. BE ASSURED THAT WE WILL BE DEEPLY APPRECIATIVE.



QUAKER OATS COLLECTION SYSTEM

At the Quaker Oats Company plant in Akron, Ohio, there are several processes of operation which create dust — always an annoyance to employees and plant neighbors. Grain is conveyed by air for a considerable distance, from storage bins to a processing building. Grain is passed through cleaning machines. Grain is ground into feed by high speed hammermills.

The dust created by these operations is sucked away by high speed fans and most of it is accumulated in so-called cyclone collectors. The very fine dust which these collectors do not catch has been a nuisance around the factory and neighborhood.

To catch this fine dust, and thereby eliminate a troublesome element, The W. W. Sly Manufacturing Company of Cleveland has designed and installed a dust filter (shown in the photo) which was put in operation recently. The filter is located on top of the seven-story factory building of Quaker Oats in downtown Akron.

The outlets to a total of seven cyclone collectors are connected to this filter. Its size is based on the total amount of air which is ex-

hausted from the conveyors, the grain cleaners and the hammermills. The volume of this air is 27,000 cubic feet per minute.

The dust filter operates on the principle of a vacuum cleaner, using hundreds of cloth bags instead of a single bag. The dust-laden air is sucked into the filter; dust deposits on the bags and the discharged air is clean and free from dust.

The entire unit is automatic in operation. An electric timer operates cleaning devices, which periodically shake the dust off the filter bags into hoppers, from which it is conveyed to a point of disposal. The system is operated continuously for 24 hours a day.

When any one of the conveyors, cleaners, or hammermills is shut down, the suction valve on this machine closes automatically and another valve at the dust filter opens to let in an equivalent amount of air; thus the system continues operation at full capacity.

The Quaker plant at Akron produces hundreds of tons of poultry and livestock feed a day, plus thousands of cases of puffed wheat, rice, hominy grits and pancake flour.

And in the oats field, this plant can make in one day enough oatmeal for 10,000,000 breakfasts.

1948 STATEMENT

1949 FORECAST

The year 1948 will go down in history as one of the banner years for American agriculture. We raised the largest corn crop in the history of the country on the second smallest acreage in fifty years. Our wheat crop was likewise very large but did not make a new record, having been exceeded the year before when production amounted to 1,367 million bushels. Our oat crop fell 44 million bushels short of being a record, having been larger in 1945, but, nevertheless, total production of these three grains was about 6½ billion bushels. If we take into account barley, milo, rye, etc., we had about 7 billion bushels, which brought the producer a tremendous income, and his receipts from farm marketings will probably run as high as \$30 billion.

A strong demand for most farm products promises to bring about the same returns to producers next year.

It is seldom that we have both high prices and big yields, but with the tremendous demand from abroad

BY RICHARD F. UHLMANN

President

Chicago Board of Trade

and our wheat and flour exports running at the rate of about 500 million bushels per year, accumulations at home are not mounting now and for that reason the situation is still quite a healthy one.

For five successive years we have raised billion-bushel wheat crops in this country and, according to the government report just issued, the same is quite likely for next summer as our winter wheat crop alone is estimated at 965 million bushels with a tremendous acreage sown. Farmers are assured 90% support prices for the next crop and because of this encouragement about 80 million acres will probably be seeded to wheat.

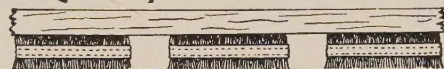
The trade is somewhat concerned that our export outlets will finally diminish, particularly if European agriculture comes back to a more normal status. However, the world population is increasing at a rate approaching 30 million persons per year and, even with the havoc wrought by war, there has been an increase of 240 million people in total world population during the last ten years. Here at home we also have more mouths to feed than ever before, although the consumption of wheat is becoming somewhat more moderate owing to the fact that less will be fed to animals because of the big corn crop.

On the assumption that our domestic utilization will be about 700 million bushels, we may look forward to a carryover reserve next July of about 300 million bushels. With the prospect of another large crop, possibly 400 to 500 million bushels may be on hand one year later. If any such figure is reached, it would be about double the pre-

BRUSHES RIGHT—FROM THE START— In Quality and Workmanship



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PRICES.



Separator Brushes

↑ We can furnish separator brushes for any machine.

← The STAR Warehouse Push Broom

This is the broom that is used by most large terminal elevators for sweeping grain out of box cars.

Brushes for Every Commercial and Industrial Use

FLOUR CITY BRUSH CO., Minneapolis 15, Minn.

Fire and Dust Proof Removable Section

ELEVATORS

ELEVATOR CASINGS

SPIRAL CONVEYORS AND BOXES

SPOUTING AND BLOW-PIPING

THE "MILWAUKEE" CYCLONE DUST COLLECTOR

COMPLETE ELEVATING, CONVEYING AND

DUST COLLECTING SYSTEMS

L. BURMEISTER CO.

MILWAUKEE

WISCONSIN

war average reserves of 235 million bushels.

It, therefore, becomes apparent that if government non-recourse loans on commodities are unrealistic and too high, ownership of the commodities will pass to the government by default. This emphasizes the need for free, open and competitive markets in order to market our grain crops satisfactorily. The problem of the farmer since our agriculture first started was not to produce less but rather to sell more. Large crops have always spelled prosperity for the country, and it is difficult to underestimate what the various carriers and transportation companies have received in benefits afforded by the movement of our various agricultural products. Arrivals of grain and livestock in Chicago alone on a single day have amounted to as much as 2,000 carlots. Vesselmen assert that outgoing lake tonnage from Chicago during periods of good crops is easily 2 million tons of grain per year which furnished a large percentage of their total business.

There can be little room for doubt that should the grain exchanges of this country be too severely curtailed by outside intervention, business would be very rapidly centralized in the hands of a few powerful groups. The latter, alone, would be the buyers that would declare the margins on which farmers' grain would be handled, as, indeed,

BUFFALO SHIP ARRIVALS SET RECORD

Since the 1948 navigation season opened at the Buffalo port, more than 111 million bushels of grain have been unloaded at the port elevators, with at least 10 million bushels more booked for winter storage in ships harbored in Buffalo. In the week ending December 6 ships carried 8,448,228 bushels to the city exceeding the previous season's record set the preceding week by more than a million bushels.

GRAIN

GENERAL MILLS ULTRA-MODERN MILL

The new General Mills, Inc. plant at Los Angeles which will be put into operation late in January—is utilizing all the developments that milling technology has proven practical. The 3600-sack flour mill will be separated from the grain cleaning house and from the storage facilities. Laver Robertson has been named superintendent of the elevator and will have charge of the 300,000 bushel capacity steel-welded storage tanks. There is no tunnel under the tanks and no conventional galley or headhouse above them. Grain is conveyed through enclosed Redler conveyors, instead of the more common type of flat belt and tripper type of conveyor. Elimination of the tunnel and headhouse does away with dust explosion chambers. With both the tanks and conveyors air-tight, plans call for the grain to be stored under an inert gas to inhibit biological and bacteriological life that might be present in the grain. The gas used will probably be a combination of carbon dioxide and nitrogen, both of which are non-explosive and non-toxic.

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GIANT FLOATING

GRAIN DISCHARGER



Capacity 600 tons per hour — minimum costs per ton discharged.

One-fourth the power consumption of former pneumatic constructions.

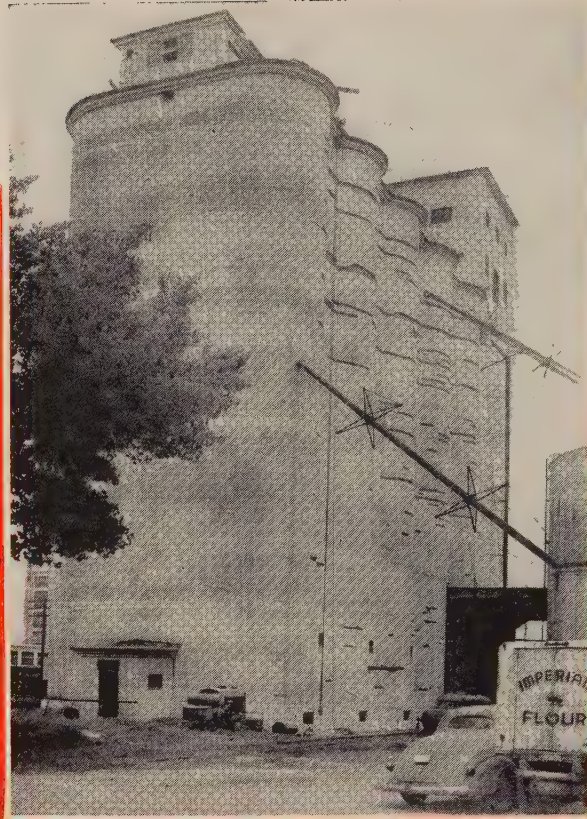


BUHLER

ENGINEERS FOR INDUSTRY SINCE 1860

BROTHERS, INC.

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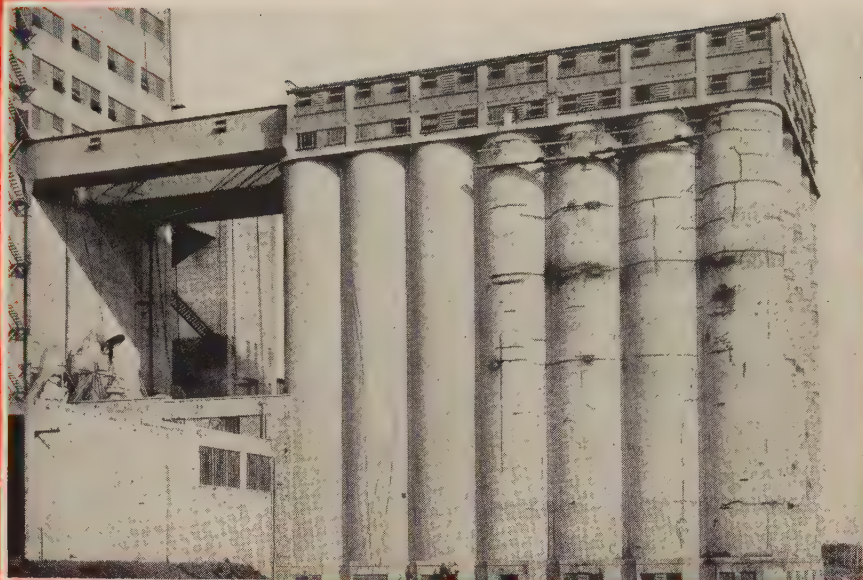
B. J. MANY CO., INC.

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AFTER



FINISHED JOB

WORK IN PROGRESS

They **DISCOVERED**

WHAT Ponce de Leon LOOKED FOR

IN VAIN... The "Fountain of Youth"

Owners and operators of grain elevators, including many of the largest in the country, have discovered an unfailing "Fountain Of Youth" for their properties. The time-tested, weather-tested B. J. Many process of repairing and weather proofing elevator structures.

This "Fountain Of Youth" is not a temporary "tonic" . . . not a flimsy patch-up job that has to be done over at your expense . . . not a beauty treatment that merely dolls up the surface of an elevator, providing but slight protection against the elements.

No. When B. J. Many completes a job of repairing and weather proofing it's a finished

job . . . a thorough job through and through. All disintegrated concrete is chipped out. Cavities are filled with Guniting reinforced with mesh anchor bolted in place . . . a lasting job. Then comes the protective coating applied in four thick applications; remains flexible.

A B. J. Many job costs more, it's worth more, lasts longer . . . and that's what counts. Cheap materials and faulty workmanship represent false economy.

Write for complete details. Protect your properties. Securely safeguard that "golden" grain.

BRANCH OFFICES: 1100 Baltimore Life Building, Baltimore 1, Maryland—827 N. W. 31st Street, Oklahoma City, Oklahoma.

AUTHORIZED AGENTS: Mr. H. W. Webb-Peploe, 409 Monmouth Road, West Long Branch, New Jersey—Pioneer

Sand and Gravel Company, Inc., 901 Fairview Avenue, North, Seattle 11, Washington—Northland Machinery Supply Co., Ltd., 203 Hardisty Street, Fort William, Ontario, Canada—Northland Machinery Supply Co., Ltd., Winnipeg, Manitoba, Canada

WEATHERPROOFING FOR PRESERVATION

When you go to your dentist for advice on tooth trouble, you expect him to investigate and make the proper repairs and not to crown a tooth before removing the decay.

We, as concrete dentists, must also investigate to determine the source of trouble in concrete bins, as we have investigated *other* problems in *other* industries, and if, in our investigations, we are led to the consideration of some of the basic actions of living grain, please do not think that we are trying to tell you gentlemen how to store grain but are analyzing for *our own understanding* and for *your benefit* the things which occur within grain bins that affect the permanence of our repair work.

Weatherproofing is the art of preserving buildings through an intelligent understanding of natural forces and the use of proper ma-

terials. What is weatherproofing? May I repeat — weatherproofing is the art of preserving buildings through an intelligent understanding of natural forces and the use of proper materials.

As we are discussing concrete grain bins, their preservation and repair, a knowledge of the concrete and steel from which they are made is essential.

Concrete

It will be assumed, for the purpose of this discussion, that we know all about the steel and that the concrete aggregate and sand have been selected for soundness and low water absorption and that they are chemically inert. It may be said, then, that the cement is the principal chemically active ingredient entering into the bin structure.

WARREN G. BROWN
Director of Research
Western Waterproofing Co.

In the manufacture of cement, certain elements found in some limestone and clays are caused to change their chemical form so that they may combine with each other (upon the addition of water) into molecules of a cementing gel.

To make concrete, we add various sizes of sand and aggregate, around which these molecules of gel form, to hold them rigidly together. It is therefore obvious in the manufacture of cement that the amounts of each element entering into the combination must be exactly in their respective combining proportions so that all of each element is used when the gel is formed and that

Douglas



YOUR FUMIGATION PROBLEMS



What is your grain fumigant problem? As far back as 1916, grain handlers and elevator operators were bringing their individual fumigant problems to Douglas Chemical & Supply Company. Through the years, Douglas technicians have given personal attention to thousands of separate and different cases. Frequently, in finding the correct solution, new or improved methods are discovered. *You benefit* from this source of improvement when you order Douglas fumigants and insecticide sprays.

Write today for complete information.

"PIONEERS OF SAFE INSECTICIDES"

Douglas Chemical and Supply Company

1324-26 West 12th St. INCORPORATED 1916 Kansas City, Missouri

BRANCH WAREHOUSES: INDIANAPOLIS, INDIANA; SPOKANE, WASHINGTON;
MINNEAPOLIS, MINNESOTA; PORTLAND, OREGON.

no further chemical action shall take place.

Unfortunately, for practical reasons, this is not actually accomplished and there are certain residues left after the cementing gel is formed which continue to change their state chemically, always trying to reach equilibrium with natures changing conditions.

Then, in adding aggregate to the cementing gel, it is not possible to add the exact amount which, plus the gel formation, would yield a perfect solid; there are always void spaces. Also, for practical reasons of mixing and placing too much water is used and its ultimate loss leaves additional void spaces.

We say concrete shrinks on setting. It does, but first it swells because we add water to the elements to form molecules which occupy more space than the elements without the water added. There are many things which occur in the hardening of cement but the final result is a definite shrinkage of mass as attested by the wonderful work

of Dr. A. H. White of the University of Michigan. On a bin 20 ft. in diameter, there will be a little more than $\frac{1}{2}$ " shrinkage divided into many small hairline internal and surface cracks usually running vertically between pours and horizontally at pour joints.

Concrete Cracks

We are interested in these cracks because they form the path or entrance into the structure for water which, as you all know, is the universal solvent; also, water washing down the surface of a bin may pick up acid salts from the surface and carry them along into the cracks where, as an active solution, they are neutralized at the expense of some of the hydroxides in the concrete. Given time and repeated cycles of this action, the concrete will be reduced to the insolubles only, that is, sand and hard aggregate, and, as the damage to the concrete is increasingly greater with each cycle, due to the enlargement and greater depth of the paths of entry, a time does come when the

steel in the concrete is reached and oxidization occurs. This oxidization liberates a force of from 14,000 to 16,000# per sq. in., due to crystal formation. This force is sufficient to cause spalling of the concrete. To the average owner, these minute cracks in the face of the concrete bins have no great importance, but to those of us who build, use and repair them they are of utmost importance because we know that, as a cancer in the human body destroys the cell structure, these cracks are just as surely permitting the structure of the cement molecules to be carrier away as dissolved — water soluble, salts (calcium bicarbonate) and the strength of the bins is being destroyed.

No matter how well your bins are designed and built and how good your concrete is, there are still the shrinkage cracks for water to enter.

Suppose you say we will stop all water from entering through the bin surfaces by sealing them 100% tight. What then? One of nature's laws is

GIANT GRAIN CAPACITY CLEANING

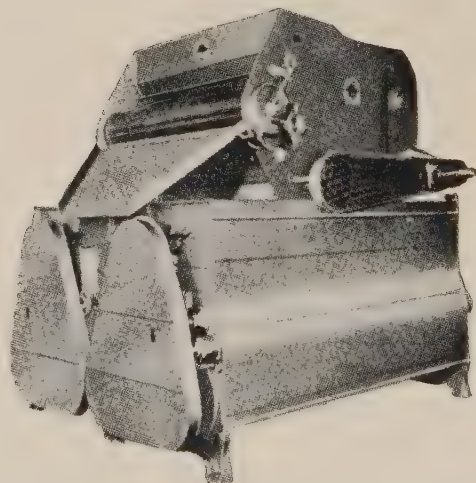
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TERMINAL ELEVATORS

Choose the 2564 CARTER
Disc-Cylinder Separator



Left: A Carter disc section. Thousands of undercut pockets separate foreign matter from grain or seed by length differences. Below: Hart Uni-flow cylinders give positive control of grain flow.



Here's a complete grain cleaning machine for the giant capacity requirements of terminal elevators. Fits compactly into crowded working space, giving maximum bushel capacity per cubic foot of machine. Will clean up to 1200 bushels an hour of spring wheat and all varieties of wheat, barley and oats. Carter discs are combined with cylinders for exact, flexible cleaning operations plus scalping and aspirating. All-metal, all-enclosed for maximum cleanliness.

HART-CARTER COMPANY

670 Nineteenth Ave. N. E. Minneapolis 13, Minnesota

that all things capable of taking up moisture have a moisture content which is in equilibrium with the average moisture content of the air surrounding them. This is normal moisture and it varies with locations, etc. We are not interested particularly with normal moisture in grain bins although there are places where we try to change it. We are interested in excess moisture and how we can get excess moisture in grain bins when the outside is sealed 100%.

Breathing Grain

Because of the fact that grain is a living thing and breathes, as we do, taking up oxygen and giving off carbon dioxide, heat and moisture, there is always moisture present inside a grain bin. This moisture will condense on the inside surface of the bin walls under suitable conditions and be carried into the walls by capillary force and, if the exterior surface is sealed 100%, vapor pressure differences in the outside air cannot pick up the moisture in the walls and dry them out. The walls, therefore, become saturated with trapped moisture which, com-

binning with the carbon dioxide given off by the grain, soon starts to dissolve the concrete structure from the inside, progressing to the outside.

A striking case of this nature as reported by Engineering News Record is the deterioration of a gate structure at Newport News, Va., 80'x25'x48', in one of the submerged shipways built during the war. The case was investigated and the conclusion was reached that the high concentration of carbon dioxide in the water surrounding the pier was the destructive element.

The problem then is not only to exclude moisture from the outside, but to assist nature to remove the moisture given off by the grain from the inside.

Grain bins, like human beings, must breathe; that is, they must be permitted to give off or take up moisture by vapor pressure differences in the outside air until they reach equilibrium with the surrounding air.

Surface Tension

To permit them to breathe, seems like quite a problem when we realize that we must not seal an exterior bin surface 100% and yet we must keep the excess rain water out. Suppose we take advantage of another of nature's laws—the one having to do with the surface tension of a liquid. Let's see what happens. Suppose, in some way we try to densify the exterior bin surfaces to a definite degree (not 100%) with a material which will not cause the breaking down of the surface tension of the globules of water on the surface; then we can keep the rain and the excess water from being drawn into the wall by capillary force and the vapor pressure differences in the outside air will soon cause the bin walls to come into equilibrium with the average moisture content of the air surrounding them.

An added advantage accruing from this procedure is the increase in insulating value due to a dry wall. The University of Florida found that an increase of moisture in test walls made of a certain mix

of concrete of from 0% to 5% increased the "K" or heat transfer factor 23%, an increase to 10% increased the "K" factor 46% and an increase to 15% increased the "K" factor 132%. In other words, this increase in the "K" factor means that the grain and moisture vapor adjacent to the inside surfaces of the bins are subjected to rapid changes in temperature as the outdoors air temperature changes and is very apt to increase the rate of condensation inside the bins.

So relatively dry walls are very essential in nature's scheme of keeping things in equilibrium. It is practically impossible to keep walls dryer than the average of the moisture content of the air around them, nor does it seem desirable when we realize that our bins are held together with a cementing gel which requires a certain amount of water for crystallization.

Of course, there will be many people who will take exception to what I have just said, but the fact remains that, over the years, experience in the restoration of many,



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SUPERIOR ELEVATOR CUPS
ARE
MADE STRONGER
WILL
LAST LONGER
HAVE
GREATER CAPACITY**

and will operate more efficiently at less cost than other elevator cups.

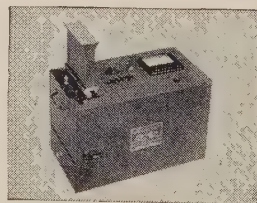
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Moisture Tester

As quickly as a sample can be weighed and dropped into the Steinlite, an instantaneous reading is obtained. By means of a conversion chart the reading is changed into actual moisture percentage. The entire test can be completed in ONE MINUTE. Steinlite operates on the radio frequency impedance principle, calibrated against official oven methods and guaranteed to give comparable results. No technical knowledge is required and no previous experience. The most popular rapid tester on the market for determining the moisture content of whole and processed grains.

726 Converse Building, Chicago 6, Illinois

SEEDBURO
EQUIPMENT COMPANY

many buildings bear out our conclusions.

We have stated a few of the causes of disintegration. We have purposely omitted references to what can happen to the grain when stored under improper conditions, and now, in a few words, we will try to tell you a little about the repair work being done on grain bins.

Before going into the types of coatings commonly used for such work, it is well to impress on your minds the fact that *covering up* a fault *does not cure* it any more than crowning a tooth without removing the decay would be the answer; that is, no matter what type of final coat is used on a job, the faults in a bin *must* be remedied before the final coat is applied. The cutting out and repairing of spalled concrete, the cleaning of the surfaces, etc., involves plenty of equipment, knowledge, and experience in order to produce a job which will last.

There are two types of coatings, one of which allows the wall to "breathe"; the other seals the wall surfaces and prevents "breathing."

These "*non-breathing*" sealing, coatings are usually of the asphalt or thick paint type, about 3/16" thick, and are applied with or without a layer of membrane imbedded in them. Their life is generally longer than that of the thinner paint type coatings. Their cost is usually higher than other coatings and, if they have to be removed for any reason, the cost of removal is very high.

As the life of these coatings is dependent on the use of a slowly oxidizing oil, it follows that during the early part of their life, at least, they could furnish a considerable amount of fuel for a fire and become a real fire hazard. In their later life, as the organic oils become oxidized, they become brittle and crack and peel, and no longer fulfill the purpose for which they were applied.

The thinner paint types are the same as the heavier paint and asphalt types, only in a lesser degree. One thing quite common to these types is that very little repair

work is usually done before they are applied, which leaves a possibility of extensive early future repairs with the necessarily much higher repair cost.

The "breathing" type are usually Portland cement base materials containing many different kinds of admixtures to produce waterproofness, opacity, color, etc., and are applied by brush and spray gun.

In general, their ultimate cost over a period of years is lower than the thick paint and asphalt type because the cancerous spots are repaired and not camouflaged, and they offer no fire hazard.

You will all agree that concrete grain bins fulfill the requirements of a satisfactory structure because of comparable initial cost, fire proofness, length of life, etc.

That by proper weatherproofing, their usefulness can be enhanced in that the grain can be kept in condition with less turning and that the useful life of the bins may be prolonged.

We believe that, in buying any repair job, it is well to remember that equipment, men, experience, responsibility, knowledge, and integrity are as much, or more, a part of the job than are the materials used because weatherproofing is the

art of preserving buildings through an intelligent understanding of natural forces and the use of proper materials.

ILLINOIS GRAIN PLANS NEW TERMINAL ELEVATOR

The Illinois Grain Terminals Co. announces the purchase of about 11½ acres of land on the Calumet River at 106th St., Chicago, where the company plans erecting a 3,000,000 bushel elevator. The ground was sold by the Chicago & Rock Island Railroad and the new elevator will have both rail and lake facilities as well as for river barge handling.

NEW KANSAS ELEVATORS

A new 200,000 bushel elevator will be built by the Montezuma Co-Op Exchange at Montezuma, for completion before the 1949 harvest. Ground has been broken so that construction of the concrete structure by the Tillotson Construction Co. of Omaha will soon be under way.

The Bucklin Co-Op Exchange, Bucklin, will build a new 3,000,000 bushel elevator and office building. A modern 60-foot scale will be installed and officials of the exchange believed the new buildings will be ready for the harvest of 1949.

SAVE TIME AND MONEY



You Can—with the
**Fastest
Grain-Door
Opener**
Available Today

DARDEN-POOL CO.

1st & Hascall Sts.
Omaha - 8 - Nebr.

ALVA TERMINAL ADDS

Capacity of 500,000 bushels will be added to the Alva Public Terminal elevator, Alva, Oklahoma, according to a recent announcement by Flour Mills of America, Inc., Kansas City, owners of the elevator. The new construction authorized by directors of the parent company will increase the Alva elevator capacity to 2 million bushels and enlarge Flour Mills of America total grain storage facilities to 13 million bushels with daily flour output at 34,000 CWT.

ELEVATOR INSTALLS CAR LOADER

The public Terminal Elevator at Wichita, Kansas, has just installed a new car unloader. Capacity of the structure is 3 million bushels.

DENVER ELEVATOR DESTROYED

A spark from an electric motor is reported to have set off a blaze which recently destroyed the 160,000 bushel elevator owned by the Denver Elevator Co., Kelim, Colo. The total damage was estimated at

\$400,000 which in part included 125,000 bushels of grain, three car loads of sacked feed and two car loads of corn.

BUFFALO ELEVATORS LOADED

With most of the grain elevators in Buaffo filled to capacity, grain shipments are being diverted to other elevators in the city in order to prevent diversion to other ports. The large amount of grain in storage is due to the recent East Coast longshoremans' strike.

PEAVEY ELEVATOR BURNS

Fire believed to have started in the cupola burned the Clontarf, Minn., elevator of F. H. Peavey & Co. to the ground. The fire spread rapidly when the elevator belt burst into flames and fell to the bottom of the pit. Loss was estimated at \$125,000.

SEARLE BUYS 54 ELEVATORS

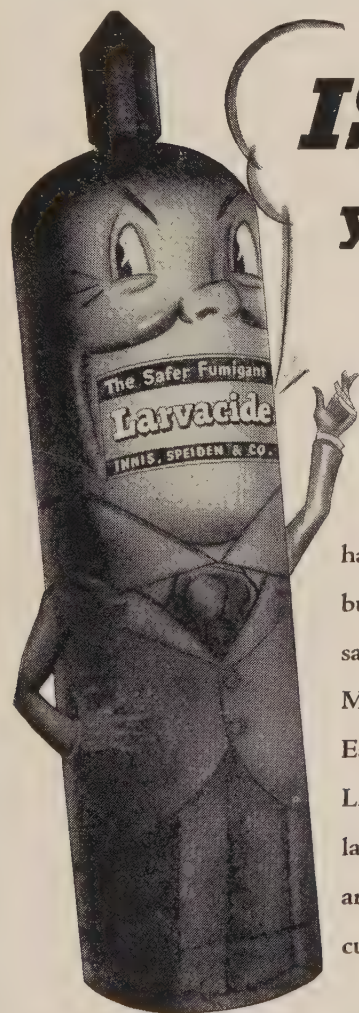
The Searle Grain Co., Winnipeg, announced the purchase of 54 country grain elevators from the Reliance Grain Co., and have incorporated them into the Searle elevator system. The Searle chain now numbers 459 country elevators in the three prairie provinces of Canada. The transaction completed the sale of the Reliance elevator system.

MEXICAN ELEVATOR PLANNED

A 2-million bushel elevator at Mexico City is in the planning stage. Jones-Hettelsater Construction Co. and Milling Engineers, Inc., both of Kansas City, have been working on the proposed plans of the Nacional Distribuidora y Reguladora in the Mexican capital.

CANADA HAS WHEAT SURPLUS

Canada is faced with the problem of finding markets for some 65 million bushels of wheat which will be in surplus after domestic needs are met for seed, baking and feed.



ISCONTROL **your Weevil** **problem !**

When you use
LARVACIDE, you get control
plus! **LARVACIDE** not only
handles granary weevil and rice weevil,
but is also deadly to lesser grain borer,
saw-toothed grain beetle, flat grain beetle,
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Easily applied when receiving or turning,
LARVACIDE's kill includes egg life and
larvae. There's no explosion or fire hazard,
and **LARVACIDE**'s tear-gas warning
cuts accident risk.

KILLS RATS TOO!

LARVACIDE at low economical dosage drives them out on the open floor to die, where they may be swept up without carcass nuisance! Fast acting—overnight exposure.

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Larvacide

CHLORPICRIN

You can get your supply of **LARVACIDE**
in handy 1-lb. bottles, 12 to wooden case,
or in cylinders from 25 to 180 lbs.

DAVID SWAN JOINS DIXIE MACHINERY MFG. CO.

David P. Swan has joined the Dixie Machinery Mfg. Co. as field engineer and assistant in general sales promotion.



D. P. Swan

Formerly connected with the Gruendler Crusher & Pulverizer Co., Swan has an extensive background in the feed milling industry, including experience covering design and construction of entire plants as well as the specialized adaptation of grinding and pulverizing equipment.

E. W. Noxon, president of the company, has also announced that, as part of Dixie's contemplated expansion program, plans are under consideration for the installation of a testing laboratory to be erected at the plant. This will enable the organization to engage in further research into the problems confronting the rapidly expanding feed mill and industrial grinding field.

Both men are active members of the International Institute of Milling Technology, Swan being a director of this technical research organization.

In addition to hammermills, in size and capacities to meet every requirement, the Dixie concern manufactures hay grinders and cake grinders. Also to be made available are feed mixers, horizontal and vertical batch mixers, feeders and auxiliary equipment.

SUPERIOR SEPARATOR REASSIGNS PERSONNEL

The Superior Separator Company announces effective November 1, reassignment of sales personnel for the Flour Mills, Terminal Elevators, and Malt Plants.

Mr. Fred Douglass with six years service with the Company will handle such accounts in the following Metropolitan areas: Minneapolis, Milwaukee, Manitowoc, Wisconsin; Chicago, Cleveland, Buffalo, Indianapolis, Pittsburgh, Cincinnati.

Mr. R. E. Krieger will handle accounts in the following Metropolitan areas: Cedar Rapids, Iowa; Des Moines, Iowa; Council Bluffs, Iowa; Sioux City, Iowa; Kansas City, Missouri; Hutchinson, Kansas; Lincoln, Nebraska; Omaha, Nebraska; and St. Louis.

SHANZER ADDS TO STAFF

The growing interest in the "Berico" Columnar Grain Driers for the efficient low-temperature drying of corn, flax, wheat, milo and other grains has required the appointment of a midwest representative by the H. M. Shanzer Co., San Francisco. L. Joy Allen heads the new office and will act as district manager for Berico grain driers, Aspirating Grain Cleaners and "Max-I-Pacity" Grain Elevators.

Elwood E. Cone has been appointed Chief Engineer with headquarters in San Francisco where pre-fabricated grain driers are manufactured.

"SCREW-FLO" READY

The urgent need of sanitation in screw conveyor systems has been met by the Screw Conveyor Corporation, Hammond, Ind., with the development of what is considered a most startling advance in bulk material conveying. The company

has now placed on the market their "Screw-Flo", a conveyor in which both the tube and the screw revolve. Old U-Type troughs lacked sanitation because materials would cake or lodge on the bottoms and sides against the hangers and box covers. "Screw-Flo" permits all material handled to be conveyed out with nothing remaining in the system. The tube works with slow revolutions, about 2 RPM, while the screw travels at its customary rapid speed.

NEW BULLETIN ON MAGNETS

A new bulletin describing Dings High Intensity Perma-Plate Alnico magnets for removal of harmful tramp iron from food, chemicals, coal, feed, foundry sand and other materials, has just been issued by Dings Magnetic Separator Company, 4740 W. McGeogh Ave., Milwaukee 14, Wisconsin. The bulletin shows how Dings Perma-Plate magnets can be installed in or above wood or metal chutes, ducts, pipes, hoppers, spouts, conveyor belts, feed tables and other places, where extraction of destructive tramp iron is necessary for protection against machinery damage, product contamination, fires and explosions. Three types of magnets are shown.

**TO SPEED
PRODUCTION
TO SAVE
MANPOWER**



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"INDUSTRIAL
ERECTORS"
DO IT**

An Organization experienced with the structure and design of every type of materials handling and production machinery and equipment.

An Organization accustomed to volume operation and specialized mechanical services.

An Organization tooled for the biggest job—and mobile enough to serve the smallest and most urgent needs.

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ENGINEERS AND ERECTORS OF MATERIALS HANDLING EQUIPMENT,
STRUCTURAL SUPPORTS, & PRODUCTION MACHINERY

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CHICAGO 8, ILLINOIS

ALL PHONES: SEELEY 3-1677

NEW SEEDBURO OFFICIAL

Seedburo Equipment Co., Chicago, Illinois has announced the election of A. O. Seehafer to a vice presidency. Mr. Seehafer will be responsible for technical improvement, product research, and development of new applications for the many equipment and supply items in the Seedburo line.

Since joining Seedburo earlier this year, Mr. Seehafer has worked extensively on new applications and refinements of the widely used

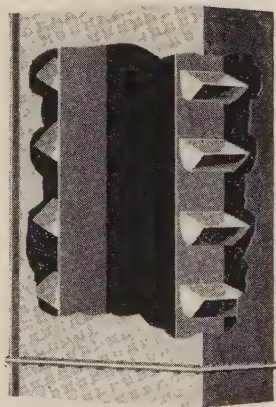
Steinlite moisture tester in the grain and seed trades and related fields. In this connection, he has been working closely with the Department of Agriculture in adapting the Steinlite to the requirements of the tobacco trade. He has also been instrumental in extending the application of the Steinlite to the pecan field and other specialty fields as a result of successful use by peanut processors.

His extensive background in engineering well qualifies him for the

responsibilities he has assumed. He received degrees in Electrical Engineering and Physics from Northwestern University, and continued his research in Electrical Physics on a fellowship in Europe for one year. Since completing his education, Mr. Seehafer has for 15 years been associated with two leading industrial concerns in product engineering and sales development capacities.

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PROMPT shipment
on our famous
Inner-Locked Belting
FOR CONVEYING & ELEVATING



For the first time in several years prompt shipment can be made on Imperial Beltings. Improved production methods and greater availability of raw materials make this possible.

Most types of our famous Inner-Locked Belting can now be furnished from stock in widths through 24". Larger sizes require 10 days through 5 weeks, depending on kind of belting required.

All Imperial Belting is made from the very best 37½ oz. tight-woven duck . . . with a tensile strength exceeding 700 lbs. per inch of width. The plies are double-stitched with our Inner-Locked construction which permanently prevents ply separation . . . then scientifically impregnated to obtain the exact qualities needed for each type of service.

For over 35 years leading industries have found Imperial Belting "costs less to use."

WRITE, WIRE OR PHONE FOR INFORMATION AND PRICES



**Engineered
Belting**

**THE RIGHT BELT
FOR EACH JOB**

IMPERIAL BELTING CO., 1756 S. Kilbourn Ave., Chicago 23, Ill.

MACHINERY and SUPPLIES

**ELEVATORS
FOR PROCESSING PLANTS
MILLS**

J. C. KINTZ CO.

CEDAR RAPIDS, IA.

Ph. 3-2761



"PRINCIPLE" FLAX CLEANER

Revolving and Reciprocating
Screen Cylinders

Small in Size—

—Large in Capacity

**Stops Screen Damage
and Operation Attention**

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PRINCIPLE SEPARATOR CO.

4728 - 28th Ave., South
Minneapolis, Minn.

A QUARTER OF A CENTURY SERVING THE MILLING TRADE

Distributors of Wagner Electric Motors, Square D Control, Worthingham Pumps and Air Compressors, International Diesel Engines, Lovejoy Couplings, Weston Meters, Line Material Company's Transformers and line builders' supplies, as well as many other products.

Dust Tight equipment in stock for immediate shipment. Motors and Control for rent in emergency.

PORTER ELECTRIC CO., INC.

330 So. 6th St. Minneapolis 15, Minn.
Lincoln 7531

Electrical Equipment Coast to Coast

"Russ" Maas General Manager of Screw Conveyor

The Directors of Screw Conveyor Corporation of Hammond, Ind., have elected Russell B. Maas general manager and treasurer of the corporation.

Maas, a former vice president, and one of the original founders of the corporation, retained his financial interest while engaged in a venture of his own, The Russell B. Mass Company, in Chicago. Henry Cleveland, also a founder, was elected a vice president and all other officers were reelected.

"Russ", as he is widely known in the grain, feed, milling and food processing industries, has the well wishes of a host of friends in his new position which he assumed as of Dec. 1, 1948.

Phil Grotevant Dies

Phil Grotevant, 64, died of a coronary thrombosis on Dec. 11 in Harvey, Ill. For the past decade he had represented the S. Howes Co. of Silver Creek, N. Y., in several mid-western states.

From a long line of grain men, Phil first got his nose filled with grain dust at the age of 12, and thereafter he always was directly associated with the business or akin to it.

Working his way up the ladder the hard way, Phil finally became superintendent of the 10,000,000-bushel Northwestern Elevator in Chicago for Armour Grain Co., of the Santa Fe Elevator for the Armour Grain Co., and of the New York Central Elevator at Schneider, Ind., leaving that position to operate a brokerage office in Streator, Ill., for Taylor & Bournique Co.

Entering the elevator equipment field for a while, Phil eventually landed at the Kansas City Southern Elevator for Norris Grain Co. at Port Arthur, Tex., until a twister put that house out of commission. Then he sold gravity separators for Sutton, Steele & Steele in the Mississippi valley, later joining his last association.

Born at Chatsworth, Ill., on Jan. 12, 1884, he is survived by his widow, a daughter, and two grandchildren, to all of whom he was particularly devoted. He leaves a host of friends in the grain handling and processing industry, in the Society of Grain Elevator Superintendents, of which he was one of the first members, as well as in Masonic and B.P.O.E. circles.

New Conveyor Gallery

Real dispatch now can be given grain for export from the elevator of the Port of New York Authority at Gowanus Bay, Brooklyn, N. Y., since the completion of a shipping gallery costing \$350,000.

Formerly lighters and floating elevators had to be employed in shipping grain. The new loading method is expected to save about 1½ cents per bushel. The new facility will aid the port by placing it on a par with Baltimore and Philadelphia. In 1946 New York shipped about 19,000,000 bus., against 62,000,000 for Baltimore and 44,000,000 for Philadelphia.

R. F. Schaefer, engineer of design for the Port Authority, supplies the following data on the equipment of the gallery.

Two Conveyors in Gallery

The gallery is 804 feet long, 21 feet, 8⅞ ins. wide, by 12 ft. 8 ins. high.

Two conveyor belts are contained in the gallery, each 42 ins. wide. The conveyors are each divided into three sections of 390 feet, 161 feet, and 241 feet, which makes each conveyor 792 feet long. There are four plies in each belt.

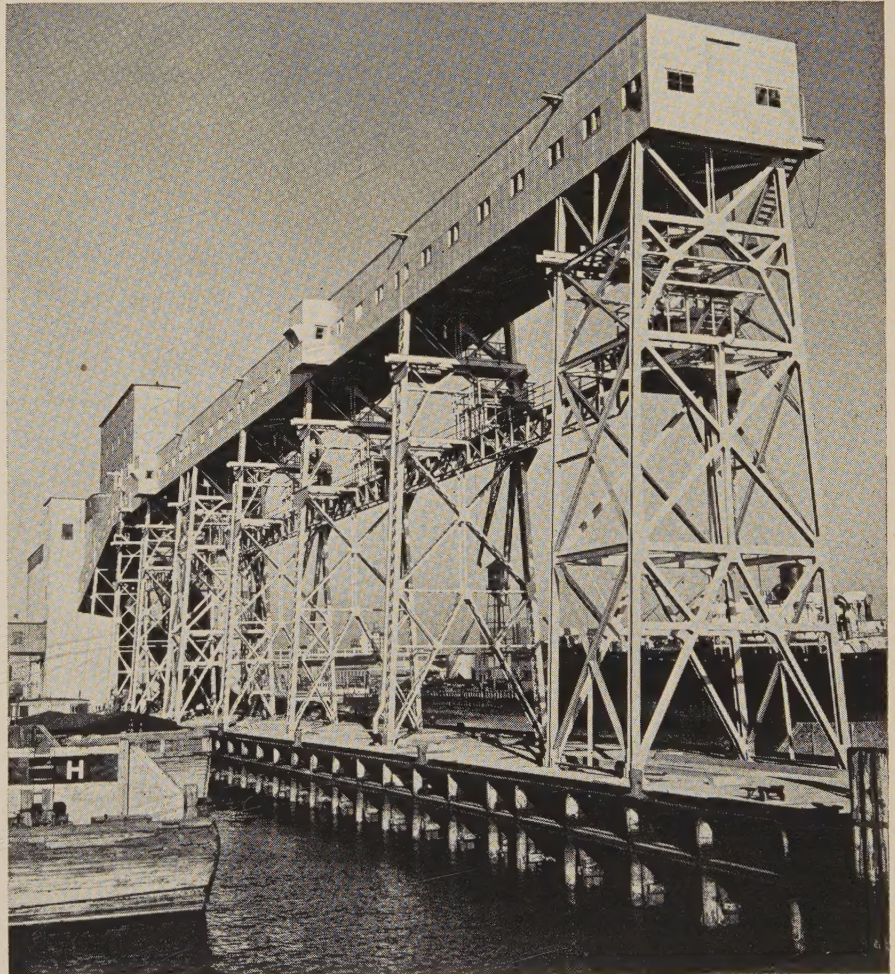
The belts in the gallery are driven by 6 G. E. 50-h.p. 2200 volt, 3-phase squirrel cage motors.

Grain is loaded on belts by gravity through chutes at the bottom of bins.

Movable trippers discharge grain into chutes which are telescopic at the lower end and which are operated by winches.

The gallery was built by contract. The machinery from the old gallery was used and installed by the Stock Construction Corporation. This organization also had the contract for the housing.

The Design Division of the Port of New York Authority designed the grain gallery.



New Conveyor Gallery of Gowanus Bay Elevator at Brooklyn, N. Y.

E. E. Beatty with J. C. Kintz Co.

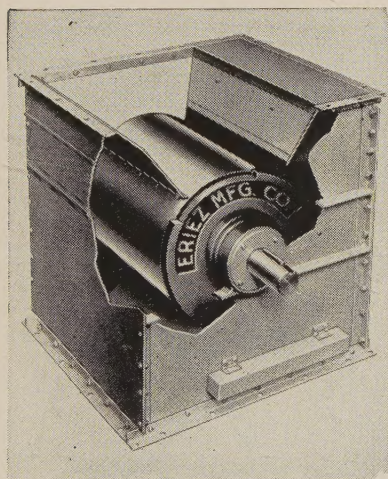
Emile E. Beatty, with a broad background of engineering and sales

of agricultural equipment, has joined the staff of J. C. Kintz Co., at Cedar Rapids, Ia., in charge of sales of grain elevator and agricultural equipment thru the regular grain trade.

The First Permanent Non-Electric Magnetic Drum

The first, completely self-energized magnetic drum requiring no electric current to produce a magnetic field is announced by the Eriez Mfg. Co., Erie, Pa. Powered by Eriez designed Alnico magnets, the unit is highly adaptable for the automatic removal of tramp iron and fine ferrous contamination where materials are conveyed in spouts, chutes and other similar conveying systems not employing belts. Such materials as grain, tobacco, plastics, ceramic sands, ball clays, powders, crumb rubber, chemicals, etc. are readily purified of iron contamination. It is used equally as well for the separation of ferrous from non-ferrous metals.

Eriez drum separators consist of a revolving cylindrical shell within which a stationary high-powered permanent non-electric magnet is located. The magnet covers about half the cross sectional area of the drum. Material is fed upon the drum shell. Non-magnetic material is discharged



Permanent Magnetic Drum

first and separately, while the magnetically susceptible portion is held against the shell until it passes out of the magnetic field.

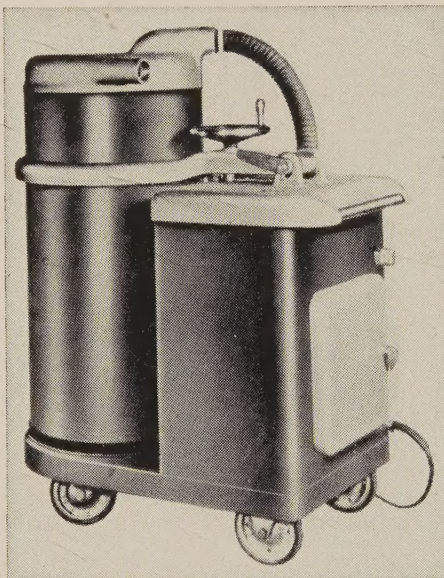
The unit is available in 18 different sizes including 12", 18" and 24" diameters and in drum widths up to 50". The drum may be ordered as a separate unit or complete with housing. Both are furnished ready for installation. Drum and housing are fully enclosed, fully automatic and of all metal construction.

Claimed advantages are: elimination of operating and maintenance; no wiring or electric current needed; cool running; no loss of magnetism through heating; electrical system failures have no effect on operation; not affected by inadequate ventilation, moisture or variations in field strength.

New, Extra Powerful Vacuum Cleaners

These advanced heavy duty vacuum cleaners provide greater suction at lower upkeep expense, combined with simplicity and extreme ease of operation.

They are available in four sizes and are driven by 2-, 3-, 5-, and 7½-h.p. standard or dustite motors. Their static water lifts range from 315 m.p.h. to 480 m.p.h., moving from 200 to 360 cubic feet of air per minute.



Extra Powerful Vacuum Cleaner

Altho possessing tremendous power, the compact units mounted as they are on free-rolling 8-inch ball bearing casters, may be readily transferred from one place to another, even in congested areas.

The cleaners are kept at a maximum degree of efficiency by a patented, self-cleaning air filter of approximately 1000 square inches.

By movement of a convenient lever the unit may be instantly changed from suction to blowing. Thus there is immediately available a powerful blast of clean dry air for blowing out motors, gears, belts, fans and other hard-to-get-at equipment.

Wet or dry material may be picked up without slightest harm to filter or tank and without the need of special attachments. The cleaner can be used for picking up dry material after emptying its wet contents. No cleaning or adjustment is required.

All units come equipped with two intakes. Each or both of which can be used with 1½ inch or a 2 inch hose . . . both attachments functioning simultaneously.

Because of the mighty power these cleaners are capable of developing, two operators can work efficiently up to 60 feet of hose.

The tank is of heavy rust-proof and corrosion-proof steel. Due to its large capacity, approximately 60 gal., requires less frequent emptying.

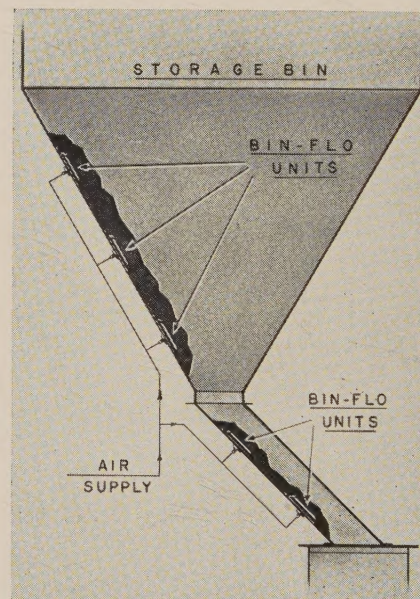
The units are insulated to absorb motor and fan noise and are free from vibration. To insure a long life of active service, cool fresh air is circulated over the motor by a special, improved cooling system.

Complete descriptive literature may be obtained, upon request, from the Burrows Equipment Co., 1316B Sherman Ave., Evanston, Ill.

Regulator for Bin Flow

A new and economical solution for the problem of restriction and stoppage of bulk materials in bins and chutes has been developed by the Bin-Dicator Co. of Detroit, Mich.

This unit is a small plate 3¾" by 7½" by ½" thick which is readily located at points where flow is restricted. Low-pressure air is injected into the material through a special fabric diffuser, causing the material to flow freely. Bin-Flo units will not



Regulator for Bin Flow

plug up even with the most finely ground materials, and are applicable to most dry, finely-ground materials.

Bin-Flo can be used in conjunction with Bin-Dicators, or can be installed independently. Models are provided for thin-walled bins and chutes, and for concrete and other thick-walled hoppers. Piping can be run either outside of a thin-walled bin or inside of a thick-walled container.

The company will be glad to make suggestions and specify the type of unit and mounting to meet different needs. Further information may be obtained on application to Bin-Dicator Co., Dept. N-1304, 14615 E. Jefferson Avenue, Detroit 15, Mich.

SUM-FUN

Recipe for Keeping Warm This Winter—One old-fashioned wood-burning furnace, one old-fashioned wood pile, and plenty of old-fashioned.

* * *

The father of an aspiring young concert pianist persuaded composer Leopold Godowsky to give the girl an audition. When she had finished, the beaming father turned to the composer and cried:

"Isn't she wonderful?"

"She has an amazing technique," conceded Godowsky. "I have never heard anyone play such simple pieces with such great difficulty."

* * *

A visitor found Smith playing chess with his dog.

"Mighty smart dog you've got there," said the visitor.

"He ain't so smart," said Smith. "I beat him three out of four."

Partner-in-sympathy: "To what do you owe your extraordinary success as a house-to-house salesman?"

Partner: "To the first five words I speak when a woman opens the door. I say, 'Miss, is your mother in?'"

* * *

For weeks, the destitute concert violinist, shivering in his tenement, had enviously watched the daily arrival of a bad neighborhood violinist who played in the court below.

When the bad violinist sawed out his wretched tunes, windows in the tenement opened and tenants threw out wads of money.

One day the concert violinist tried it, played very brilliantly. He collected only 80 cents.

Completely bewildered, he put the question to the neighborhood violinist that afternoon.

"That's simple," said the novice. "You also have to be a book-maker."

Trying to rest after an exceedingly hard day, poor father was being bedeviled by an endless stream of unanswerable questions from little Willie.

"Whatddaya do down at the office?" Willie finally asked.

"Nothing!" shouted father in exasperation.

It looked as if the boy had been put off for a while, but not for long. After a thoughtful pause, Willie inquired: "Pop, how do you know when you're through?"

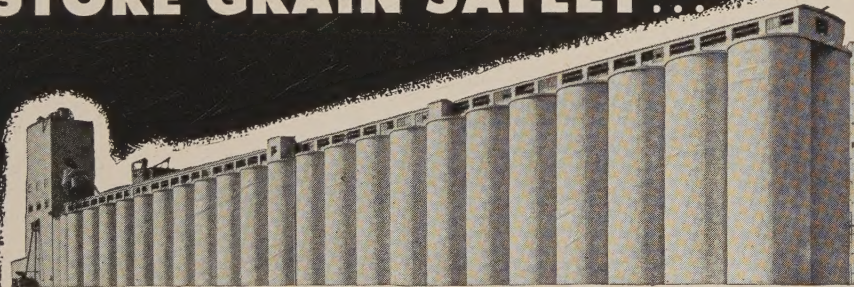
* * *

Capital and labor are perfectly willing to perform as a team—the only trouble is that each wants to be the lead horse!

* * *

Without management, labor is a wheel without a hub; without labor, management is a wheel without a rim. Without wheels, there can be no progress; and without progress, there can not be Man.

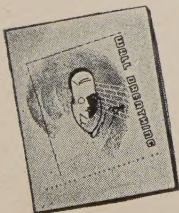
STORE GRAIN SAFELY...



Within
Walls That
Breathe

Scientific research has proven grain in storage must be ventilated with constantly changing fresh air in order to live. This grain must also contain a balanced amount of moisture—but if excessive dampness increases this moisture content, the grain will spoil. If air cannot pass through the elevator walls, or if water seeps through disintegrated concrete areas, thousands of dollars will be lost in ruined grain.

To reduce spoilage, elevator walls must "breathe"—must permit a limited amount of air to enter and leave. And the same concrete, which allows air passage, must also repel water or excessive moisture.



Write today for "Wall Breathing"—a valuable free booklet describing the causes of and remedies for concrete deterioration. Every elevator operator and grain man should read it.

Western's engineers and technicians, backed by 35 years of experience, have successfully applied this "Wall Breathing" principle to many of America's largest mills and elevators. Thousands of dollars have been saved by restoring deteriorated masonry, installing necessary movement joints, and thus preventing consequent grain spoilage. Protect your structure by contacting the nearest Western office at once... a skilled Western engineer will inspect your elevator without obligation.

Let Western Be Your Concrete Dentist

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ATLANTA, GA. • CHARLOTTE, N. C. • KANSAS CITY, MO. • SPRINGFIELD, ILL.



It Costs Too Much!

YES, That Right!! . . . It Costs Far Too Dearly To Permit Your Plant Restoration Work To Be Delayed Even a Single Season . . . Those With Costly Past Experience Know That The Rate Of Deterioration **ZOOMS** Upwards With The Passing Of Each Successive Year . . . Hence The Cost Of An Intelligent Periodic Building Maintenance Program Quickly And Profitably Liquidates Itself **IN EVERY WAY!**

YOU, Too, Will Find That Protecting Your Investment Is Especially Wise, Particularly When You Can Depend So Completely Upon . . .



Every Day The Elements Are Gnawing Away at Your Properties, Eating Up and Tearing Down Your "House Of Cards." Why Not Protect Yourself As Best You Can By Consulting With . . .

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